INTERPERSONAL ORIENTATION CORRELATES OF NONVERBAL BEHAVIOR IN CONVERSATIONAL INTERACTION

By

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INTERPERSONAL ORIENTATION CORRELATES OF NONVERBAL BEHAVIOR IN CONVERSATIONAL INTERACTION

By

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This study investigated the relationships between interpersonal orientation and nonverbal behavior. Twelve male and 12 female students enrolled in undergraduate speech classes were the subjects. Each subject engaged in two conversations which were videotaped so that monitors could record the occurrence of five nonverbal behaviors. The five nonverbal behaviors studied were: turn length (TL), facing (F), hand movement (M), body touching (T), and head tilts (HT). Each subject completed Schutz' Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) scale and the Self-Other Orientation Tasks (SOOT) developed by Ziller. The seven interpersonal orientation measures studied were: expressed control (EC), wanted control (WC), expressed inclusion (EI), and wanted inclusion (WI) from FIRO-B, and self-esteem (SE), self-centrality (Cent), and

self-complexity (Comp) from SOOT.

The following hypotheses were proposed:

1. There is an overall relationship between interpersonal orientation and nonverbal behavior.

2. F and HT are positively related to WI and inversely related to EI.

3. TL and M are positively related to WC and Cent.

4. High HT and low TL are associated with high WC and low EC.

5. High T and low TL are associated with low SE and low EC.

6. Comp is not correlated with nonverbal behavior.

The canonical correlation analysis was the statistical procedure employed in this study. Hypothesis 1 was statistically supported ($p < .004$). The other five hypotheses were evaluated through examination of the canonical coefficients. Hypotheses 4 and 6 appeared strongly supported. Hypotheses 3 and 5 seemed partially supported. Hypothesis 2 was not supported.

Statistical support for hypothesis 1 was viewed as support for further study of the relationships between interpersonal orientation and nonverbal behavior. The overall personality types which emerged were the abdicrat, the autocrat, and the dominant personality. The main behavioral manifestations of the abdicratic (or submissive) type were a large amount of head tilting, little body touching, and short speaking turns. The behavioral

manifestations of the autocratic (or dominant) type were the mirror image: little head tilting, a large amount of body touching, and long speaking turns.

CHAPTER I

INTRODUCTION

There is a great deal of speech related behavior other than the systematic production of sounds which determines the denotation of face-to-face communication. Of particular interest in this study are behaviors which are frequently referred to as kinesic, or body motion. Man's interest in these 'non-content' aspects of communication is not new. Almost fifty years ago Sapir (1927) expressed the belief that if we study a person's communication style we will learn much about him as a psychophysical unit when he stated that, if we analyze the speech of an individual, in its social perspective, we obtain valuable information about his psychiatric characteristics. Allport (1961) more recently posited that the expressive components, i.e., one's manner or style of behaving, reflect personality structure and serve as a potential guide to personality assessment.

The communication setting of particular interest in this study is the dyadic conversation, that is, the two-person face-to-face conversational interaction. This particular setting was selected for several reasons, practical as well as heuristic. This mode of communication is

after all the most commonly employed means by which sentiments and information are exchanged. In spite of its ubiquitous usage and in spite of a growing and impressive amount of research, much is left to be understood about the dyadic conversation. Cherry (1961) observed,

> A conversation is one of the commonest phenomena we encounter, yet it is one which raises very great scientific problems, many still unsolved. It is often our commonest experiences, which we take for granted, that are elusive of exploration and description. (p. 10)

Most of us have had the experience of being disturbed as a result of something that has been said to us and then realized that it was not what was said, but how it was said and what behaviors accompanied the spoken word. That mystical 'third ear' ascribed to some people is largely their ability to attend, at some level, to some of the behaviors accompanying the spoken message. Psychotherapists are utilizing impressions derived from observations with their 'third ear' both during psychotherapy and as a means of evaluating past therapeutic efforts. It is anticipated that the findings of this study, and future studies, will make a contribution in the effort, in the current vernacular, 'to raise the level of consciousness' of therapists in such situations as they respond to these behavioral cues.

Many terms have been used to describe what a person does while he is also speaking, some of those terms are: 'non-content communication', 'kinesics', 'non-verbal

communication', and 'body language'. The term that most adequately describes the phenomena, and the term to be used throughout this study is 'coverbal', one proposed by Markel (1975). He defines 'coverbal' as, "behavior of interlocutors which occurs in association with or accompanying words, but which is not essential for the articulation or grammatical functioning of those words" (p. 189). Further, if we consult the dictionary (Woolf, 1973) we find that 'co' is a prefix form of 'complement' which is defined in the same source as, "to make complete." So this coverbal behavior combines with the verbal behavior to make the complete communication.

The remainder of this chapter will include a section on the purpose of this study, a discussion of coverbal behavior and interpersonal orientation, and a general review of the literature. Following the review of the literature, a section is presented which discusses the research rationale with specific references to each coverbal behavior and each measure of interpersonal orientation. Next a discussion of the canonical correlation analysis is presented. The somewhat extensive nature of this discussion of the statistical analysis is based on the fact that the canonical correlation analysis is a somewhat complex, relatively infrequently utilized statistical analysis. The chapter is concluded with the presentation of the hypotheses of the study.

Purpose of the Study

The purpose of this study is to investigate the relationship between coverbal behavior and interpersonal orientation. The point will be made that research has shown coverbal behavior to be rather stable over time for an individual, while each person has a unique style of coverbal behavior. Thus coverbal behavior offers a reliable measure with which to discriminate between individuals. Interpersonal orientation is also relatively stable and unique for the individual (Maslow, 1968; Ziller, 1973). As Ziller (1973) points out, interpersonal orientation can be, and is, modified over time, else it would be nonadaptive. However, this change is gradual and this characteristic of being gradually modified gives stability to the person.

The major question addressed by this study is, "Is there a relationship between coverbal behavior and interpersonal orientation?" Following that question, an attempt will be made to identify the nature of specific relationships within that overall relationship. The coverbal behaviors under investigation are: Turn Length (TL), Facing (F), Hand Movement (M), Body Touching (T), and Head Tilts (HT). The interpersonal orientation characteristics to be employed are: Wanted Inclusion (WC), Expressed Inclusion (EI), Wanted Control (WC), and Expressed Control (EC), as measured by the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) scale developed by

Schutz (1966, 1967), and Self-esteem (SE), Self-centrality (Cent), and Self-complexity (Comp) as measured by the Self-Other Orientation Tasks (SOOT) developed by Ziller (1973).

Coverbal Behavior

By definition coverbal behavior always accompanies verbal behavior. Whatever and wherever we are verbalizing, we are simultaneously engaged in some behavior other than the articulation of words according to culturally prescribed rules. Under certain circumstances the coverbal behavior may not be a perceived component of the communication. For example, most coverbal behavior of interest in this research is transmitted via the visual channel (Markel, 1969). If that channel is unavailable to the person to whom the communication is directed, obviously these coverbal behaviors cannot be a part of the total communication as perceived by that listener. This would be the case when a sightless person is the listener, when the interaction takes place in total darkness, etc. These types of special conditions certainly have impact on the listener's sensitivity to other communication channels (e.g., auditory, olfactory, etc.), but that is not the focus of this research. A basic premise of this research is that the coverbal behaviors under investigation are available for processing by the listener or listeners.

Coverbal behavior can communicate information which is complementary to, contradictory to, or independent of,

the verbal message. When a father speaks comforting words to his frightened child while holding the child in a gentle, caring manner the father is transmitting complementary verbal and coverbal messages. The man at the beach who tells his lover he would never look at another woman, while he is watching every bikini-clad lovely in sight, is sending verbal and coverbal messages which are contradictory. The college professor, expounding on a certain theory to his class, while he still has shaving cream under his ear, is probably sending a more prominent message about himself (from the listeners' points of view he may be sending messages about his grooming, the fact that he overslept that morning, or whatever) with his coverbal message (the shaving cream) than with his verbal message concerning the theory at hand. In this example, the coverbal message probably does not complement or contradict the verbal message, most likely it is independent of the verbal message. Nonetheless, the coverbal message is a prominent, possible dominant, component of the communication.

Bateson, Jackson, Haley and Weakland (1956) presented a now well-known case for the need for agreement between the verbal and coverbal message, proposing their theory that through consistent conflict between the verbal and coverbal messages the speaker creates what they termed the 'double-bind'. Their theory went on to suggest the double-bind as a prime factor in the creation of the

schizophrenic personality. Argyle (1969) pointed out the importance of coverbal cues as they combine with the verbal message. Markel, Bein and Phillis (1973) found a normative relationship between voice and content. Their terms 'synchrony' and 'dysynchrony' are analagous to the terms 'complementary' and 'contradictory' as used in the examples in the previous paragraph.

Whatever the type coverbal communication (i.e., complementary, contradictory, or independent), it tends to consistently communicate something about the speaker himself, sometimes in addition to, sometimes instead of what the verbal message has to say about the speaker. For several reasons, the coverbal message may tell more about the speaker than does the verbal message. First, the speaker himself may be unaware of his coverbal message and therefore makes no attempt to 'filter' it so that he will 'look good' or 'look right'. Second, the rules governing coverbal behavior are less stringent (sometimes less understood) than the rules governing verbal behavior. Finally, another reason that coverbal behavior can tell us so much about the speaker is that it can be utilized in such a way that communication of sensitive messages is not so threatening. That is because the coverbal message does not place the same kind of demands on the person to whom it is directed. The coverbal message is easier for that person to simply ignore. That act of ignoring, or non-response, may be less traumatic to the sender of the message

than would an overt, verbal rebuke. An increased amount of eye contact (within acceptable bounds) can communicate to a woman that a man would like to initiate a relationship with her. At the same time, the demands for an overt response from her are not nearly so great as they would have been had he used verbal messages to communicate that same desire. The man can feel less threat of rejection, and possibly embarrassment, knowing that he has not required a verbal response of the woman. Thus, more sensitive, more personal data may more freely be communicated via coverbal behavior. She is free to simply ignore his overture, in that case his message has gotten a subtle response, and his pride remains more intact for his next adventure. Hopefully, he correctly decoded her message. For a discussion of the different rules governing verbal and coverbal behavior, and some of the implications of those differences, see Markel (1975).

The above examples illustrate two points: 1) the coverbal message can be as important as, or more important than, the verbal message, and 2) the receiver of the coverbal message, especially if untrained in decoding coverbal communication, can misinterpret the message. Both of these points are addressed by Fast (1972).

Interpersonal Orientation

Interpersonal orientation is the way an individual views himself in the context of his social milieu. For

some major personality theorists, understanding the importance of other people to the individual, and the individual's need to relate to other people, is basic to understanding the individual. Fromm (1941, 1947) spoke of man's feelings of isolation and threat as he becomes increasingly separated from other people. Adler (1939) felt that man's social interest and need for other people were instinctive. That is, man does not merely learn to need contact and affiliation with others, rather he is born with that social need as a biological given. Sullivan (1953, 1964), probably the most significant single figure in advancing the social perspective as a means for understanding the individual, felt that it was meaningless to attempt viewing the individual in any other context than the social context. In his interpersonal approach to psychiatry he pointed out that we all enter and leave this world as social beings and that the most fruitful way of conceptualizing and treating humans is as social beings. If we look at man's basic needs as postulated by Maslow (1967, 1968) we find among them social needs such as the need for affiliation and affection. An accurate and adequately high self-esteem, shaped through social interaction, is also a basic need according to Maslow (1968).

Review of the Research Literature

For some time researchers have been interested in the psychological importance of coverbal behavior. As with any

behavior under investigation, certain basic issues arose relating to quantification and analysis of the coverbal behavior data. One practical, and apparently meaningful, scheme for quantifying coverbal behavior is based on its temporal characteristics (e.g., Chapple, 1939; Goldman-Eisler, 1968; Mahl, 1956; Norwine and Murphy, 1938), with the quantity often being simply the duration of time spent engaging in the behavior. Simple duration, along with proportion of available time spent engaging in a behavior, will be the approach to quantifying coverbal behavior in this study.

As interest in the research field grew, along with an increase in man's electronic sophistication, new techniques for measuring, recording, and analyzing coverbal behavior emerged. Almost thirty years ago, Norwine and Murphy (1938) developed a sound-activated device for recording speech behavior. Chapple (1939) was developing his device, later to be known as the Interaction Chronograph (Chapple, 1949), which utilized both the human observer and mechanical devices for recording verbal and coverbal behavior. In his earlier work (Chapple, 1940; Chapple and Arensberg, 1940), Chapple had demonstrated that personality characteristics were associated with certain stable properties of individuals' interaction style.

Some ten years after Chapple (1939) began his research which led to the Interaction Chronography, Verzeano and Finesinger (1949) developed the Automatic Speech Analyzer

which eliminated the necessity of the human observer for obtaining data during interaction. Lorenz and Cobb (1952), using the Automatic Speech Analyzer, were able to differentiate normals and psychiatrically impaired on the basis of temporal aspects of their speech patterns. Chapple (1953) went on to develop his standardized interview, with which, using his Interaction Chronograph, he investigated subjects' interview behavior and its relationship to certain personality dimensions (Chapple, Chapple, and Repp, 1954).

Man's imagination and increasingly sophisticated electronic equipment available to him, continue to create innovative methods for recording and analyzing coverbal behavior. As can be noted from previously cited research, as different techniques were developing for collecting coverbal data, the data were being examined in numerous ways and contexts. In the area of psychological interests alone, researchers were relating coverbal behavior to social orientation, transient emotional states, degree of psychological health, and interpersonal needs, to name a few. With this wealth of techniques and the potential applications of the obtained data, a primary task of the researcher becomes one of choosing which techniques to utilize and to what end. That brings us to this study. A discussion of how those decisions were made in this study follows.

Research Rationale

Coverbal Behaviors

The point was made earlier that there is always coverbal behavior present during conversation. There is, in fact, so much behavior occurring that it becomes an important task of the researcher to choose just what behavior will be selected out for analyzing. Four questions were asked in this research so that the final behavior selection could be accomplished. Is the behavior detectably recorded when a dyadic conversation is videotaped? Can the relatively untrained observer reliably record the onset and termination of the behavior as the videotape is monitored? Are the behaviors easily observed during normal conversational interaction? Are the behaviors related to the interpersonal orientation of the speaker?

Previous research and pilot studies prior to this research answered the first three questions affirmatively. The outcome of this research will have to answer the fourth question. Since the results of this study were obviously not available when the behaviors were selected, selection was based on previous research which asked similar questions (e.g., Chapple, 1940; Chapple and Arensberg, 1940; Chapple et al., 1954; Lorenz and Cobb, 1952; Norwine and Murphy, 1938). The coverbal behaviors selected for investigation were: Turn length, Facing, Hand movement, Body

touching, and Head tilts. Brief research references for each behavior follow. Operational definitions of each behavior are presented in Table 1 in the Method chapter.

Turn length. Following early interest in temporal aspects of communication behavior, this behavior, or some rough equivalent, has been studied frequently. Goldman-Eisler (1954), looking at action time (percentage of total time which was spent in talking), found a relationship with the content variable of self-reference. That is, people who referred more to themselves, and presumably talked more about themselves, spoke during a greater percentage of the total time. Cervin (1957) found that individuals scoring high on a scale of emotional responsiveness also spoke during a greater portion of the available time. Markel, Bein, Campbell, and Shaw (1976) demonstrated a greater use of available time by speakers who scored high on a measure of needed inclusion. This often investigated behavior of amount of speaking time (referred to by several roughly equivalent terms such as 'action time' (Goldman-Eisler, 1954), 'participation quotient' (Prebor, 1972), 'mean percentage', (Matarazzo, Weins, Matarazzo and Saslow, 1968), etc.), seems to be related to various aspects of personality.

Facing. Facing behavior was selected because of its high correlation with eye contact. Eye contact itself is virtually impossible to detect by observers as they view videotapes of conversations. Facing, on the other hand,

is rather reliably observed and recorded by the relatively untrained observer. Clinically, eye contact is a frequently utilized diagnostic tool. Socially, this behavior seems to be thought of as an indicator of the speaker's candor. This is a good example of coverbal behavior that can be easily mis-interpreted if the listener fails to take into account cultural factors such as the norms of the culture from which the speaker comes. Argyle and Dean (1965) and Exline (1971) found facing behavior positively correlated with personal attraction. Exline (1971) and LaFrance and Mayo (1976) found facing associated with dominance. Duncan (1972) conducted research which concluded that facing is an effective tool for controlling speaking turn during conversations. When the speaking person looks away from the listener, our culture tells us that that is not a polite time for the listener to attempt taking the role of speaker. A review of the literature on facing can be found in Ellsworth and Ludwig (1972).

Hand movement. Hand movement seems to be a method of attracting attention and controlling the interaction. Dittmann (1962) found it related to approval seeking in subjects. Mehrabian (1970, 1971) found hand movement to be associated with attraction and the desire for affiliation. While some investigators have devised elaborate systems of quantitatively and qualitatively classifying hand movement (e.g., Ekman and Friesen, 1972; Frey, 1975), this study looks at hand movement simply in terms

of duration of occurrence.

Body touching. Research on body touching (touching one's own body with his hand) has not been extensive. Freedman and Hoffman (1967) found body touching to be related to anxiety level. Scheflen (1965) found body touching associated with the need for self-protection. Fast (1970), summarizing research in the field, asserts that body touching can be a coverbal method of sending a 'hands off' message to others. In other words, the person who does not want to be included can say so with his hands. The findings of these three authors are seen as being consistent in that the person who does not want to be included may experience anxiety and feel the need for self-protection.

Head tilts. Head tilt behavior appears to be an indication of attentiveness and possibly cognitive activity during conversation. In animal research it appears to be associated with submissiveness. This relationship may also hold for humans. Mehrabian (1971) and Mehrabian and Ksionzky (1970) found head tilt related to relaxation of the person.

Derived Coverbal Measures

The derived measure for Turn Length in this study was the duration of the speaking turn as defined in Table 1 in the Method chapter. The derived measures for Facing, Hand Movement, Body Touching and Head Tilts were computed

proportions of the individual's speaking turns during which he was engaged in the given behavior. The proportion measure was used rather than straight duration measure in order to control for turn length. The proportion tells us not merely how much time was spent in each behavior, rather it tells how much of the available time was spent engaging in each behavior.

Interpersonal Orientation

The interpersonal orientation measures used in this study are Wanted Control (WC), Expressed Control (EC), Wanted Inclusion (WI), and Expressed Inclusion (EI) as measured with the Funadmental Interpersonal Relations Orientations-Behavior (FIRO-B), and Self-esteem (SE), Self-centrality (Cent), and Self-complexity (Comp) as measured with the Self-Other Orientation Tasks (SOOT).

Fundamental Interpersonal Relations Orientation-Behavior. A steadily increasing amount of research is reporting various approaches to testing Schutz's (1966) theory of interpersonal orientation. For a summary of that research see Schutz (1966). Schutz bases his theory on the existence of three interpersonal needs: Inclusion, Control, and Affection. Inclusion and affection have been found to be highly correlated in research (Argyle, 1969). Therefore, it is meaningful to think of the individual in terms of the two dimensions inclusion and control. For that

reason, only the inclusion and control scales were used from FIRO-B. Schutz describes interpersonal needs for inclusion and control as follows (Schutz, 1966):

1) Interpersonal need for Inclusion (I): the need to establish and maintain a satisfactory relation with other people with respect to interaction and association, and
2) Interpersonal need for Control (C): the need to establish and maintain a satisfactory relation with other people with respect to control and power.

Schutz (1966) refers to each person's behavior in each of these dimensions in terms of the behavior expressed (E) towards others and the behavior wanted (W) from others. Emerging then are four dimensions of the individual's interpersonal orientation: Wanted Inclusion (WI), Expressed Inclusion (EI), Wanted Control (WC), and Expressed Control (EC). Schutz (1966, 1967) developed the FIRO-B as a self-report means of tapping each of these dimension. The FIRO-B is presented in Appendix A.

Schutz (1966) describes individuals whose behavior is consistently involved in satisfying his needs in the different dimensions. He describes the high I person with terms such as, "interact, communicate, and attend" (p. 21). The person with high C needs is described as displaying behavior such as, "dominance and control" (p. 22), while the low C person is seen as,

"submissive and a follower" (p. 22). How these behaviors are manifested will be influenced by the individual's needs in the I and C dimensions as to whether he wants to be included (or controlled) or whether he wants to include (or control) others. Schutz (1966) further makes the point that there is not necessarily a complementary relationship between wanted and expressed needs in a given area. The person with a high need to control others may also have a high need to be controlled by others. The domineering sergeant may need and gratefully accept control from his lieutenant.

According to his classification the 'oversocial' person is the one who exhibits excessive inclusion behavior and the 'undersocial' is the person who makes little or no attempt to include or be included. The 'autocrat' tends towards the domineering personality and is characterized by the excessive desire for power and control. Much of the autocrat's behavior is directed towards controlling others. The 'abdicrat' is the person who makes no attempt to exert control over others. Schutz (1966) points out the extreme case of the abdicrat who wants no control over others and at the same time has a high need for others to control him. This person does not say, 'I am going to leave you alone and I would like for you to leave me alone', rather he is saying, 'I do not want to control you, but please tell me what to do'.

The above personality types with their accompanying

behavioral manifestations represent deviations from an ideal state of need satisfaction according to FIRO theory (Schutz, 1966). In the inclusion and control areas talking is seen as an available means by which the person can strive towards the ideal need satisfaction state. The person with the high need to control can attempt to gain control by talking a lot and minimizing the opportunity for the other person to talk. The person with little need to control may talk less and look more to the other person for control cues. The person with high need to be included can seek attention with hand movements and by talking a great deal. The person with little desire to be included may talk less and send, 'I am not interested in being included' messages with his high rate of body touching.

Self-Other Orientation Tasks. Ziller (1970) is one among many (e.g., Maslow, 1967, 1968; Schutz, 1966; Sullivan, 1953, 1964) who proposes that man should be studied as a social unit. In his social psychological theory of personality, social adaptation is viewed in terms of self-other concepts. For a review of his theory see Ziller (1973). Three of Ziller's self-other dimensions are employed in this study.

His Self-esteem (SE) and Self-centrality (Cent) scales utilize what Ziller (1973) refers to as cognitive mapping. Through the use of ostensibly value-free symbols SE and Cent are meansured without the bias of mediating 'social oughts', so often found to be a problem when verbal

self-reports are used for tapping these aspects of personality. Subjects are asked to place symbols, representing themselves and other people, somewhere in a prescribed area. The SE scale, for instance, utilizes the proclivity in our culture for people to place items of higher value toward the left in a horizontal ordering. On the Cent scale the subject is presented with a large circle and asked to place two smaller circles, representing self and a friend, somewhere in the large circle. Scoring of the Cent scale is on the basis of whether the self or the frient is placed nearer the center of the large circle. The more often the self is placed nearer the center, the higher his Cent score. The SE and the Cent scales each contain six items as described above. All six items on the SE scale are identical except with respect to which five significant other people are represented by the symbols accompanying the ever present sixth symbol representing self. All six items on the Cent scale are identical in every respect. Because of the similarity of the items within each scale, only one sample item from each scale is presented. The sample items are found in Appendix B. The Comp scale is an adjective checklist scale containing 109 adjectives. The Comp scale, in its entirity, is presented in Appendix B. Subjects were instructed to check as many adjectives as they felt applied to them. The Comp score is computed by totaling the number of adjectives checked by the subject. The higher the number of adjectives checked, the higher

the Comp score, and the more complex is the self construct.

Ziller (1973) referred to the self-esteem as that component of the individual which mediates modification of the self in response to new information which is received about the self in social interaction. This view is consistent with the notion that self-esteem is the individuals perception of his own self-worth (Osgood, Suci, and Tannenbaum, 1957). Following these positions, as Ziller states, the individual with high self-esteem is better able to evaluate and assimilate new information. He is not the helpless, vulnerable pawn, subject to restructuring the self-concept immediately upon receipt of information which is in conflict with the then existing self-concept. The high self-esteem person uses new information as it fits for him, the low self-esteem is ever seeking new information so that he may modify the self to fit what the information tells him others think he should be.

The self-centrality scale is concerned with whether the person uses the self or others as his reference point (Ziller, 1973). The higher a person's self-centrality score, the more he uses the self as the reference point. Ziller compares high and low self-centrality with Ausubel's (1952) terms egocentrism and sociocentrism. The high self-centrality person appears incapable of perceiving his environment from others' viewpoints. He withdraws and does not want new information from others. By implication,

the person with low self-centrality can only view his environment from others' perspectives. He will constantly seek cues from others as to how he should process his environment and in turn, how he should behave. This is clearly a scale on which the healthy, well-balanced person would score in the mid-range.

As Ziller (1973) defines his measure of self-complexity it could be seen as a measure of personal adjustment. Viewing it in this sense, it is different from his other scales. In the case of his self-esteem and self-centrality scales, and in Schutz' scales, there appears a curvilinear relationship between personal adjustment and scores on the scales. That is, the well-adjusted, socially adept person will fall in the mid-range on these scales. A possible exception to this curvilinear relationship with the other scales is the self-esteem scale. Ziller (1973) presented his self-esteem-complexity matrix wherein the person falling in the high SE and high Comp cell has a differentiated and integrated theory of social behavior. This person may be the super-well-adjusted person. It appears, however, that it is in the self-complexity scale that a direct, positive correlation between scale score and adjustment is found. The high Comp person is the person capable of self evaluation, the one capable of viewing his environment from different perspectives. This is the person who is well balanced, well adjusted, and less likely to have exceptional needs or unrealistic perceptions of self or others.

The two interpersonal orientation instruments. FIRO-B, utilizing the verbal self-report technique, attempts to measure directly the individual's interpersonal orientation. FIRO-B solicits information from the person as to his behavior with other people. Through divulging these behavioral preferences, the level of the person's needs in different interpersonal areas is assessed. Since these ratings are based on the person's expressed behavioral preferences, the ratings should prove to be good predictors of how the person will behave in an interpersonal situation. A source of error in such predictions lies in the extent to which the person honestly responded to the instrument.

SOOT, while tapping aspects of the personality which are similar to those tapped by FIRO-B, is in some important ways looking at the person with a different approach. SOOT, except in the case of the complexity scale, avoids the use of words in the assigned tasks. Even with the complexity scale, words are not used in the same sense as in the FIRO-B. A verbal self-report is not involved with the complexity scale, rather it is an adjective checklist. Throughout SOOT there is the attempt to avoid 'good-bad', 'right-wrong', 'acceptable-unacceptable' type choices on the part of the responder. This is accomplished through the extensive use of symbols rather than words. Another important difference between SOOT and FIRO-B lies in the interpersonal characteristics being measured. SOOT measures characteristics which are shaped through interpersonal

experience. They are also characteristics which have considerable impact on interpersonal behavior. SOOT is not, however, attempting to directly measure behavioral preferences, as does FIRO-B. Therefore, SOOT should be a useful predictor of behavior, but in a less direct manner than is FIRO-B.

Both FIRO-B and SOOT measure interpersonal orientation characteristics which were of interest in this study. They measure similar, yet different, characteristics, with different, verbal as opposed to nonverbal, approaches. It was for the above reasons that the two instruments were included in this study.

Statistical Analysis

Canonical correlation analysis was the statistical procedure employed in this study. This is a relatively recent statistical technique which social scientists are beginning to realize can be a very useful method of looking at two sets of data. The canonical correlation (Kelley, Beggs and McNeil, 1961; Morrison, 1967) is similar to the more familiar Pearson product moment correlation where two variables are analyzed to ascertain the amount of common information contained in the two. The multiple regression equation goes a step further, providing a method for combining the variables in one group of variables and correlating the newly created variable with a single

variable of interest. With the multiple regression analysis equation not only is there a single indicator of the relationship between the single variable and the linearly combined group of variables, but we also are supplied with the coefficients of the variables themselves as they appear in the regression equation. These coefficients are the weights assigned to each of the original variables in the group. The coefficients are indications of the magnitude (numerical value of the coefficient) and the direction (algebraic sign with the coefficient) of the contribution made by each of the original variables as they were combined. Thus, we have an idea of to what extent and in what direction each variable makes its contribution.

The canonical correlation goes still one step beyond the multiple regression analysis. The canonical correlation linearly combines variables from two groups of data so that a pair of canonical variables emerge, one from each group of data. The correlation between these newly created canonical variables is computed and then it is possible to address the question of whether the two groups of data are related. The level of the correlation indicates the strength of the relationship, that is, it is an indication of how much common data is contained in the two groups. Similarly to the regression equation, we are supplied with coefficients which indicate the magnitude and direction of the influence of each original variable on the canonical variable.

The canonical correlation analysis is a very useful, somewhat complex, method of attempting to identify complex relationships. Although there is no statistical test beyond the overall correlation, specific relationships are inferred by examining the canonical coefficients. In this study the relationships being searched for are complex. They are complex in the sense that it would be too simplistic, possibly meaningless, to single out one coverbal behavior and attempt to establish its relationship with a single interpersonal orientation variable. Humans, their behavior, and their personalities are not that simple. To state that the person who needs to control others will talk longer may be true. However, there are factors other than his need to control which contribute to his behavior, and, there are behaviors other than turn length through which his interpersonal orientation will manifest itself.

After one pair of canonical variables has been identified and tested, others may also exist with the same data sets. In fact, there can be as many pairs of canonical variables as there are variables in the smaller group of data. The procedure is continued until the correlations are not significant or until the number of correlations reaches the number of variables in the smaller data group. In each new relationship, if more than one exists, there is a new set of coefficients and the statistical tests are carried out in the same manner. A more detailed discussion of these procedures is presented in the Method chapter.

Hypotheses

Utilizing five coverbal behavior measures obtained from 24 videotaped conversations, and seven interpersonal orientation scores, four from FIRO-B and three from SOOT, this study attempts to support the existence of a relationship between coverbal behavior and interpersonal orientation. Naturalness of the conversations was maximized as subjects were placed in a comfortable environment and asked to discuss relevant social discussion problems with virtually no time constraints placed on the length of their conversations.

Canonical correlation analysis is applied to the data. The canonical correlation is conceptually more complex than a t-test or a pairwise correlation such as the Pearson product moment correlation. Similarly, its interpretations are more complex. To predict an overall relationship between the two groups of data is straightforward enough, and that prediction is directly testable with the canonical correlation analysis. However, to look inside the data groups and make specific, directional relationship predictions involving several variables involves risks beyond the obvious risk of being wrong by predicting a relationship that does not exist. There exists the risk of failing to support an hypothesis, not necessarily because the hypothesized relationship does not hold true, but because of the way the variables were combined in the computation

of the canonical variable. As pointed out earlier, several canonical relationships are possible. If, in the construction of the canonical variable(s) for a given group of the data, the relative directions of two variables within one group, both of which are in an hypothesized relationship, are not the same as they appear in the hypothesis, full support of the hypothesis is not possible. An example makes this point more concrete. Noting the second hypothesis in this study, it predicts that head tilts and facing will be positively related to WI scores and inversely related to SE scores. In addition to the main, overt prediction that two coverbal behaviors will vary directly with one interpersonal orientation score and inversely with another interpersonal orientation score, another prediction is implied. The other prediction is that facing and head tilts will vary together and that WI and SE scores will vary inversely. If the variables are not combined in a way consistent with these latter, implied predictions, full support of the hypothesis is not possible. Nonetheless, to resort to pairwise predictions involves a level of simplicity inappropriate for this study and the relationships at interest.

Research has shown that interpersonal aspects of personality are related to coverbal behavior (Allport, 1961; Chapple et al., 1954; Goldman-Eisler, 1954).

Hypothesis 1: There is a relationship between coverbal behavior and interpersonal orientation.

Facing has been shown to be associated with personal attraction (Argyle and Dean, 1965; Exline, 1971). Head tilting behavior appears related to submissiveness (Argyle, 1969).

Hypothesis 2: F and HT are positively related to WI and inversely related to EI.

Goldman-Eisler (1954) found that subjects talked more if their self reference was greater. Dittmann (1962) found hand movement associated with the desire to get approval from others and to control the other person in conversation. The person who wants to control his conversational mate will talk a great deal (Schutz, 1966).

Hypothesis 3: TL and M are positively related to WC and Cent.

Head tilting is associated with submissiveness (Argyle, 1969). The person desiring to control will talk more than the person not wishing to control (Schutz, 1966).

Hypothesis 4: High HT and low TL are associated with high WC and low EC.

Scheflen (1965) found body touching associated with the need for self-protection. The person wanting control over others will talk a great deal (Schutz, 1966).

Hypothesis 5: High T and low TL are associated with low SE and low EC.

Ziller's (1973) high self-complexity individual is a well-balanced person. This person is less likely to have outstanding need areas which are unsatisfied. As the

self-complexity drops, idiosynchratic needs will emerge. It seems that these needs will emerge in an unsystematic fashion, not predictable from the self-complexity level of the person.

Hypothesis 6: Comp is not correlated with coverbal behavior.

CHAPTER II

METHOD

Subjects

Twelve male and twelve female students enrolled in introductory speech class at the University of Florida volunteered to participate in this study. All subjects were caucasion; ages ranged from 18 to 27, with a mean age of 20.3. Two males and two females were selected from the volunteers from each speech section and those four subjects comprised a group for this study. Other than the specified gender requirement, the only condition imposed on the composition of the group was that subjects' familiarity with other group members be limited to the interaction in the speech course in which they were currently enrolled. The resulting sample then was made up thusly: six groups of two males and two females; each group drawn from a different section of the speech course; each subject's prior interaction with his group members was limited to interaction in speech class.

Equipment

Conversations between pairs of subjects were recorded

in a carpeted room with dimensions of approximately 10 x 15 feet. Subjects were seated at adjacent sides of a padded card table in comfortable, padded arm chairs in one corner of the room. Each subject was seated at approximately a 45° angle to a Sony 3210 video camera equipped with zoom lens. The video camera was connected to a Sony AV 3600 Videocorder which was the recorder used for recording the audio, as well as the video, signals during conversations. A Sony microphone was mounted on a stand between and slightly behind the subjects. Subsequent to the exeprimental sessions, continuous lapsed time in minutes, seconds, and tenths of seconds from beginning to end of each conversation was superimposed on the video tape by means of a Model VTG33 Odetic Video Timer.

Discussion Problems

Each of the discussion problems was of assumed and apparent contemporary social interest. One problem, the "abortion" problem, involved a young married couple groping with the decision of whether or not the pregnant wife should have an abortion. The other problem, the "living together" problem, concerned a young, heterosexual, unmarried couple, living together, trying to decide how they should present their living situation to his parents, who were unaware of their cohabitation, while the parents were in town for a brief visit. Judging from observed level of

apparent interest on subjects' part and based on verbal response of subjects after the experimental sessions were completed, subjects actually became quite involved in the discussion problems. The texts of these problems are presented in Appendix C.

Interpersonal Orientation Instruments

The two instruments utilized for measuring interpersonal orientation of subjects were the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) developed by William Schutz and Self-Other Orientation (SOOT) scale developed by Robert Ziller.

FIRO-B is composed of 54 items and has been used with subjects ranging from eighth grade to adults. The results of this instrument yield six scales: Expressed Inclusion, Wanted Inclusion, Expressed Control, Wanted Control, Expressed Affection, and Wanted Affection. Only the first four of these scales were used in this study. The possible range of scores on these six scales is from 1 to 9, with all scores being integers. This instrument was designed by Schutz (1966, 1967) to measure the relatively stable attitudes of an individual which determine his interactive behavior. Schutz has published considerable research demonstrating validity for his instrument.

SOOT was designed to measure individuals' self-other orientation in terms of their perceived relationships. The method of assessing self-esteem and self-centrality is

the use of ostensibly value-free symbols which result in subjects' supplying more valid information about themselves than would be expected in more traditional, verbal, self-report inventories. In the self-esteem scale symbols represent the self, significant other people such as family members, teachers, friends, etc. The subjects' tasks were to arrange the symbols according to certain instructions. Scoring is accomplished by obtaining the sum of the assigned numerical values according to the position in which the symbol representing the self is placed. The self-centrality score is based on whether the 'self' is placed nearer to or farther from the center of a large circle than is the symbol representing a friend. Each scale has six items. The self-centrality items are identical throughout the scale. The only difference between the six items of the self-esteem scale is in the significant other people which the symbols represent. The complexity scale consists of a 109-word adjective checklist. Even though the SOOT is a relatively new instrument, a considerable amount of research has demonstrated the reliability and validity of the scales (Ziller, 1973).

The SOOT scales used in this study are Self-Esteem, Self-Centrality, and Self-Complexity. Sample items from the self-esteem and self-centrality scales are presented in Appendix B. Because of the similarity of the items, only one item per scale is presented here. The entire self-complexity scale and the general instructions for SOOT are also

presented in Appendix B.

FIRO-B is presented in its entirity in Appendix A.

Procedures

Subjects were assigned experimental session times by group so that one group participated in an evening. After all group members had arrived for a session one experimenter explained that the purpose of the study was to study the behavior of persons in conversation in a dyadic setting. They were told that each of them would participate in two conversations, one each with two of the other members of their group, and that the conversations would be recorded on video tape. They were also informed that they would complete several paper and pencil instruments which would call for information about themselves and information about how they felt about their experience of participating in the study. Subjects then signed consent forms for participation in the experiment.

A second experimenter then took two subjects to the taping room where they would have their conversations. The camera and recorder was started by the experimenter. Subjects were seated at the table with copies of one of the discussion problems affixed to the table in front of each of them. They were instructed to read the discussion problem and discuss as long as they needed to in order to come to some agreement on a solution. The experimenter read the subjects' identification numbers into the

microphone, told the subjects to call him when they were finished, and left the room.

During the first conversation the first experimenter had the subjects who were not participating in the conversation complete half of the paper and pencil tasks that they were to complete. Following the first conversation, the subjects just completing their conversation were taken to other rooms where they completed half of their paper and pencil tasks while the other two subjects had their first conversation.

The process was continued until each subject had: participated in two conversations (one each with a same-sex and an other-sex partner), completed the background information form, the FIRO-B, the SOOT, and semantic differentials relating to how they felt about the experiment, the experimenters, and their partners. Of the paper and pencil instruments, only the FIRO-B and the SOOT were used in this study.

Subjects were randomly assigned to: either complete FIRO-B or SOOT first, discuss the 'abortion' problem or the 'living together' problem first, and converse with a same-sex or opposite-sex partner first.

Data Reduction

Monitors were trained to observe the tapes and record the occurrence of the coverbal behaviors listed in Table 1. Each conversation was monitored once at normal tape speed

Table 1

Coverbal Behavior Definitions

	Behavior	Definition
1.	Turn	Begins when one speaker starts talking and ends when the other speaker starts solo talking
2.	Facing	Subject's nose is pointed roughly at the center of partner's face
3.	Right hand movement	Any movement of subject's right hand and wrist, unless it results from a movement of the whole torso
4.	Left hand movement	Any movement of subject's left hand and wrist, unless it results from a movement of the whole torso
5.	Right hand body touching	Any part of subject's right hand touching any part of his body
6.	Left hand body touching	Any part of subject's left hand touching any part of his body
7.	Head tilt	Subject's eyes are not in a horizontal plane

for each behavior for each subject. During that first monitoring the approximate beginning and ending times of that behavior were recorded. Using those approximate times as guides, the tape was then played at slow-motion speed (approximately 1/15 of normal speed) to record more precisely (usually within 0.1 second) the beginning and ending times. These times were obtained by using lapsed time which had been superimposed on the tape with an Odetic Video Timer after conversations were completed.

Monitors were assisted in determining beginnings and endings of turns by having a typed verbatim transcript of the conversations. Periodic checks indicated that tracking was reliable when monitors had been given several hours training.

Derived Coverbal Measures

A computer program was developed which used the beginning and ending times for each coverbal behavior and for the turns and computed durations and frequencies of all behaviors per turn. For the purposes of this study, total hand movement and total body touching were of interest, rather than hand movement and body touching broken down by left and right hand. Therefore, right hand movement and left hand movement were combined into one measure: Hand Movement (M). Also, right hand body touching and left hand body touching were combined into one measure: Touching (T). The coverbal measures used in the statistical

analysis were the grand mean per behavior for subjects across both their conversations, after summing across turns. In the case of the measure Turn Length (TL), it was the grand mean of the turn lengths across both conversations. The behaviors: Facing (F), Hand Movement (M), Touching (T), and Head Tilt (HT) were computed as proportions of the respective turn which was spent engaging in those behaviors. The grand mean for each subject that was used for these behaviors then was the mean obtained across all speaking turns of both conversations using those proportions.

Data Analysis

The statistical method for analysis of the relationship between the two groups of data (interpersonal orientation and coverbal) was the canonical correlation. There were five variables in the coverbal data: Turn Length (TL), Facing (F), Movement (M), Touching (T), and Head Tilt (HT). Seven Personality variables made up the other group: Expressed Control (EC), Wanted Control (WC), Expressed Inclusion (EI), Wanted Inclusion (WI), Self-Esteem (SE), Self-Centrality (Cent), and Complexity (Comp). The first four of the personality variables are scales from the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) and the last three are scales from the Self-Other Orientation Tasks (SOOT).

Canonical correlation analysis is a method whereby the question, "Is there a significant relationship between the

two groups of data?", can be addressed. Further, an indication of the strength of the relationship(s) is indicated by the level of statistical significance. More specific ideas about to what extent each original variable makes its input into the relationship is inferred from the canonical variable coefficients. Further elaboration on this statistical procedure and subsequent inferences is presented in the Result and Discussion chapters.

CHAPTER III

RESULTS

Monitors' Reliability

In order to assess the reliability with which the three monitors recorded the coverbal behavior, a monitor other than the original monitor viewed 30-second segments of each conversation tape, recording the beginning and ending times of each behavior. Although five coverbal behaviors were used in the data analysis, seven behaviors were observed in the raw data. This is because two pairs of behaviors (left and right hand movement and left and right hand body touching) were combined into two behaviors (Hand Movement and Touching respectively) prior to data analysis. As pointed out in the Method chapter, the behaviors of interest were hand movement and body touching, with no concern for which hand was involved.

For continuous data, such as the measures in this study, a satisfactory indication of inter-monitor reliability is provided by the Pearson product moment correlation coefficient. Table 2 contains the Pearson correlation coefficients for the seven coverbal measures. The coefficients range from a low of .79 for Left Hand Movement to a high of .99 for Left Hand Body Touching. Four of the

Table 2

Pearson Correlation Coefficients for Reliability Data[a]

Behavior	R
Turn Length	.98
Facing	.96
Left Hand Movement	.92
Right Hand Movement	.79
Left Hand Body Touching	.99
Right Hand Body Touching	.98
Head Tilt	.89

[a]Correlations were computed on duration of behavior as originally recorded and as recorded by a different monitor during 30-second intervals for each behavior of each conversation.

seven measures were greater than .95. The inter-monitor reliability was found to be quite satisfactory for all coverbal measures. Clearly, the behaviors under investigation are observable to the extent that an individual with minimal training can reliably record their occurrence.

Data Analysis

The statistical method used for analyzing the data was canonical correlation. Since the coverbal behaviors Facing (F), Hand Movement (M), Touching (T), and Head Tilt (HT) were expressed as proportions, these data were transformed before computing the canonical correlations so that a better approximation of a normal distribution would be obtained. The angle arcsin of the square root was the transformation employed. The mean values of the coverbal behaviors and the interpersonal orientation measures appear in Appendix D.

As pointed out in the Method chapter, the canonical correlation is analagous to the more familiar Pearson product moment correlations. However, the test for significance is not carried out in the same manner. In the case of the canonical correlation it is first converted to a chi square statistic which is in turn tested for significance. Similarly to the multiple regression analysis, the canonical correlation yields coefficient values for the original variables. These are the values which, when used as coefficients for the original variables, combine the

original variables to produce the respective canonical variables. That is, using the canonical coefficients to determine the weight (magnitude and direction) of the input of each original variable a new pair of variables (the canonical variables) is created. The resulting two variables (one for each of the two groups of data) have the highest possible correlation of any pair that can be created by linearly combining the variables in the respective groups of data. In order to remove (arbitrary) influence of scale and variability, the coefficients are normalized. Normalizing is accomplished by first multiplying each coefficient by the observed standard deviation of the corresponding variable. The resulting values are then rescaled so that the coefficient is equal to 1.0 (absolute value) with each coefficient retaining the appropriate algebraic sign. It is through examination of these normalized values that we get an idea of the relative contribution of each variable to the common information shared by the two groups of data. The canonical variables (C_r = coverbal, IO_r = interpersonal orientation) and their normalized coefficients are presented in Table 3.

The first canonical correlation (R_1) was significant ($R_1 = .89$, $\chi^2 = 61.56$, df = $p < .004$). The hypothesis that there is a relationship between the coverbal behaviors observed and the interpersonal orientation measures derived from FIRO-B and SOOT was supported. While no further statistical test is appropriate, further information as to

Table 3

Normalized Canonical Variable Coefficients

C_r = 1.00HT - .61T - .54M - .45TL - .23F

IO_r = -1.00EC + .76WC - .60SE - .60Cent - .55 EI + .05WI - .03Comp

C_r = Canonical variable for coverbal behavior

IO_r = Canonical variable for interpersonal orientation

Coverbal Behavior: HT = Head Tilt, T = Touching, M = Hand Movement, TL = Turn Length, F = Facing

Interpersonal Orientation Data: EC = Expressed control, WC = Wanted control, SE = Self-esteem, Cent = Self-centrality, EI = Expressed inclusion, WI = Wanted inclusion, Comp = Complexity

the relative importance of each variable is inferred from the individual coefficients.

Looking at the coefficients of the coverbal behaviors, Head Tilt (HT) with its coefficient of +1.00 provides the greatest input into C_r. Touching (T) and Movement (M) with coefficients of -.61 and -.54 respectively are of considerable importance. Turn Length (TL) with a coefficient of -.45 is of some importance. The coefficient of -.23 assigned to Facing (F) indicates that facing behavior was not meaningful in the context of this particular canonical relationship.

The strongest single variable from the interpersonal orientation data was Expressed Control (EC) with its coefficient of -1.00. Wanted Control (WC) with a rather large coefficient of +.76 is the next strongest variable entering into IO_r. Self-Esteem (SE), Self-Centrality (Cent), and Expressed Inclusion (EI) are of considerable importance with their respective coefficients of -.60, -.60, and -.55. Wanted Inclusion (WI) and Complexity (Comp) with their respective coefficients of +.05 and -.03 are of virtually no importance in the canonical variable IO_r in this relationship.

The second canonical correlation was not significant ($R_2 = .78$, $\chi^2 = 34.41$, $df = 24$, $p > .05$). Thus it was concluded that there were no other linear combinations of the two groups of data which would yield canonical variables which were significantly correlated and which were

uncorrelated with the previously obtained canonical variables. No further statistical analyses were carried out.

CHAPTER IV

DISCUSSION

Personality Type and Coverbal Behavior

The first canonical correlation was statistically significant. This indicates that there is a significant relationship between the coverbal behaviors observed during the conversations and the interpersonal orientation characteristics measured by FIRO-B and SOOT.

Specifically, Hypothesis 1 stated that there is, overall, a relationship between the coverbal behaviors observed and the interpersonal orientation measures in this study. This hypothesis followed from the findings of previous research (e.g., Allport, 1961; Chapple et al., 1954; Goldman-Eisler, 1954), and was significantly supported. The principal personality dimension to emerge from this relationship was that of need for control. Expressed control and wanted control, two of the scales from FIRO-B, were the two strongest interpersonal orientation factors in the study. As pointed out in an earlier chapter, it is possible for there to be significant canonical relationships beyond the first relationship. None, however, was found beyond the first relationship in this study. If others had been identified, the coverbal behavior variables and the

interpersonal orientation measures would have been combined in ways different from the combinations in the first relationship. That would have permitted further discussion of other personality types.

Hypothesis 6 predicted that self-complexity would not be related to coverbal behavior. This hypothesis was viewed as strongly supported as the self-complexity coefficient was extremely low, the lowest, in fact, of all the coefficients. This hypothesis was consistent with Ziller's (1973) description of self-complexity. Ziller's high self-complexity individual is seen as a well-balanced person without extreme interpersonal needs, whereas, this study was looking at the behavioral correlates of elevated interpersonal needs. Therefore, support of this hypothesis is seen as further validation of Ziller's concept of self-complexity.

Hypothesis 4 predicted that a large amount of head tilting and short turns would be associated with high wanted control and low expressed control. This hypothesis was strongly supported as the predicted relationships were consistent with the relationships indicated by the canonical coefficients. The person with a high need to be controlled and a low need to control others (the abdicrat) does, in fact, exhibit submissive, non-controlling behavior in the form of a great amount of head tilting and short turns. The relationship equally supports Schutz' concept of the autocrat, that is the person with a high need to control

others and a low need to be controlled by others, as this person exhibits minimal head tilting behavior and long turns. The abdicrat and the autocrat are examples of excessive needs in the interpersonal orientation dimension that Schutz identifies as the interpersonal need for control. It appears then, that two behavioral manifestations of the interpersonal need for control are head tilts and turn length.

Hypothesis 3 predicted that turn length and hand movement would be directly related to wanted control and self-centrality. This hypothesis received rather strong, although partial, support. Turn length and hand movement are directly related to self-centrality. However, they are inversely related to wanted control. All variables varied in the predicted direction with the exception of wanted control. It should be noted that, of all the hypotheses predicting directional relationships, this is the only hypothesis in which a control variable varied differently from the predicted direction. It is also the only one of the directional hypotheses which makes a prediction about self-centrality. It is possible that self-centrality is more significantly related to turn length and hand movement than is wanted control. That is, given that a person exhibits lengthy speaking turns and a great deal of hand movement, there may be reason to believe that he is highly self-centered, but insufficient data for predicting his need to control others. His high self-centeredness may

produce lengthy speaking turns and a great deal of hand movement regardless of his need to control others.

Hypothesis 5 predicted that a large amount of body touching behavior and short turns would be associated with low self-esteem and low expressed control. This hypothesis received partial support. The only measure which did not vary in the predicted direction was body touching. Body touching was directly related to self-esteem and expressed control, rather than inversely related as predicted. In fact, the extent to which body touching contradicted the hypothesized relationship (judging from the relatively large magnitude of its coefficient) was surprising. The strength of this relationship indicates that body touching may not be well understood in terms of its psychological significance. Little previous research has been conducted with this coverbal behavior. Body touching was seen at the formulation of this study as a behavioral manifestation of feelings of anxiety, of the need for self-protection, and the need to not become involved with others (Fast, 1970; Freedman and Hoffman, 1967; Scheflen, 1965). In fact, however, the canonical relationship indicated that body touching is related to the need for control. This result is more in keeping with the suggestion by Scheflen and Scheflen (1972) that body touching is related to dominance.

Hypothesis 2 predicted that facing and head tilts were directly related to wanted inclusion and inversely related to expressed inclusion. In view of the weak input of three

of the variables (facing was the weakest of all coverbal behaviors, and expressed inclusion and wanted inclusion fell fifth and sixth in order of magnitude of the seven interpersonal orientation measures), there was no support for this hypothesis.

In sum, this study provided statistical support for the relationship between coverbal behavior and interpersonal orientation. The most salient interpersonal orientation characteristic of this relationship was the interpersonal need for control as measured by the Fundamental Interpersonal Relations Orientation-Behavior scale (Schutz, 1966, 1967). The most salient of the coverbal behaviors of this relationship were head tilts and body touching.

The overall personality types that emerged are clearly the abdicrat and the autocrat as described by Schutz (1966) and the dominance dimension as described by Scheflen and Scheflen (1972). The main coverbal behavioral manifestations of the abdicratic (or submissive) type is a large amount of head tilting, little body touching, and short speaking turns. The coverbal manifestations of the autocratic (or dominant) type is the mirror image: little head tilting, a large amount of body touching, and long speaking turns.

Methodological Considerations

Preserving the naturalness of the experimental environment was emphasized throughout the study. Subjects

were placed in a comfortable, familiar-type of setting with much care given to making the environment as distraction-free as possible. Data recording during the interactions was accomplished as unobtrusively as possible, with all recording equipment (except the microphone) at least ten feet from the subjects. Subjects discussed relevant social issues with their peers. No time constraints were placed on the conversations, and no one was present during the conversations except the two interactants. It was felt that, to the extent that naturalness could be preserved, individuals' authentic, unique coverbal styles would be displayed during the conversation. The interactive aspect of the behavior was viewed as critical for this research. In the past, some researchers have studied coverbal behavior as it related to personality by analyzing data which were obtained during subjects' speaking a monologue (e.g., Gottschalk, Winget, and Gleser, 1969; Vargas, 1968). The monologue seems to be an inappropriate method for gathering data which are hoped to be shown related to interpersonal orientation. By definition, the interpersonal component of communication is removed from the monologue.

A point should be stated about the sample size in this study. The sample size was rather small. The principal reason for this is the extremely lengthy work involved in reducing the data from video tapes of conversations to analyzable data. Additionally, this was an exploratory study. As Hays (1963) pointed out, small

sample sizes are often utilized in exploratory studies because the exploratory studies are trying to identify relationships for further study and refinement. The exploratory study serves as a guide for further research, and that is one of the purposes of this study. Further justification for the use of a rather small sample size lies in the test for statistical significance. As is the case with all statistical tests, sample size was taken into consideration in the test for significance in this study. While one could virtually always make the statement, 'the larger the sample size, the better', in this case, there seemed to be adequate support for the use of the rather small sample.

A final point is made in reference to the methodology. Modern videotaping equipment, elaborate computer reduction of the data, and complex statistical analysis were utilized. However, the human observer was an integral part of the research. No behavioral data were used in this study which could not be reliably observed and recorded by the relatively untrained observer. In order to demonstrate, in a hard-data sense, the relationship between coverbal behavior and interpersonal orientation, the modern electronic equipment was employed. Future application of the findings of the study can, however, be accomplished, without any special equipment and without disruption of normal face-to-face conversational interaction. The only equipment required is the ever-present, best of all machines, the human.

Future Research and Application

Adequate evidence was presented to encourage and warrant further investigation of the relationships between coverbal behavior and interpersonal orientation. Of the interpersonal orientation measures studied, Schutz' control dimensions appeared especially salient. Ziller's self-esteem and self-centrality measures also appeared promising in terms of further research. Following the identification of these personality characteristics as related to coverbal behavior, future research can focus more specifically on these behaviors and their relationships with coverbal behavior. Self-complexity was supported as a measure of personal adjustment and should be explored further in that context.

For the researcher interested in coverbal behavior, there was no evidence pointing to the elimination of any of the five coverbal behaviors for consideration in future research. Turn length and facing, two often studied and apparently important behaviors, appeared as the least powerful of the coverbal behaviors. It may be that the correct combination of behaviors and personality characteristics has not yet been identified in the case of these two variables. This study hoped to identify basic relationships for further study. Which of those relationships are selected is partly a function of the interest of the researcher. Whichever relationships are investigated, the

naturalistic conversational interaction seems to be an excellent setting within which to study them.

Taking a more long-range viewpoint, the application of the more refined and more clearly defined relationships has important implications for humans. Scheflen and Scheflen (1972) pointed out in quite some detail the pervasive extent to which coverbal behavior is a vital part of our communication. They presented impressive evidence of the fact that this subtle means of communication can be, and in fact is, extensively utilized to control members of society. Not only is coverbal behavior a powerful means of control, but it is also so subtle that it can be used outside the awareness of the controlled person. Further research will lead to a better understanding of the 'coverbal language'. The subliminal message is a difficult one to which to respond. As heightened awareness is accomplished, more rational, adaptive responses should follow. This may lead to a new freedom for the individual from undesirable control imposed by society. In a more positive way, this increased awareness can result in increased effectiveness on the part of those individuals who are attempting to bring more freedom and individuality for the person, for example in the work of the better trained psychotherapist.

APPENDICES

APPENDIX A

FIRO-B

SUBJECT NUMBER _____ DATE _____

DIRECTIONS: This questionaire is designed to explore the typical ways you interact with people. There are, of course, no right or wrong answers; each person has his own ways of behaving.

Sometimes people are tempted to answer questions like these in terms of what they think a person should do. This is not what is wanted here. We would like to know how you actually behave.

Some items seem similar to others. However, each item is different so please answer each one without regard to the others. There is no time limit, but do not debate long over any item.

For each statement below, decide which of the following answers best applies to you. Place the number of the answer on the left of the statement. Please be as honest as you can.

1. usually 2. often 3. sometimes 4. occasionally
5. rarely 6. never

___1. I try to be with people.

___2. I let other people decide what to do.

___3. I join social groups.

___4. I try to have close relationships with people.

___5. I tend to join social organizations when I have the opportunity.

___6. I let other people strongly influence my actions.

___7. I try to be included in informal social activities.

___8. I try to have close, personal relationships with people.

___9. I try to include other people in my plans.

___10. I leg other people control my actions.

___11. I try to have people around me.

___12. I try to get close and personal with people.

___13. When people are doing things together I tend to join them.

___14. I am easily led by people.

___15. I try to avoid being alone.

___16. I try to participate in group activities.

For each of the next group of statements, choose one of the following answers:

1. most people 2. many people 3. some people 4. a few people

5. one or two people 6. nobody

___17. I try to be friendly to people.

___18. I let other people decide what to do.

___19. My personal relations with people are cool and distant.

___20. I let other people take charge of things.

___21. I try to have close relationships with people.

___22. I let other people strongly influence my actions.

___23. I try to get close and personal with people.

___24. I let other people control my actions.

___25. I act cool and distant with people.

___26. I am easily led by people.

___27. I try to have close, personal relationships with people.

___28. I like people to invite me to things.

___29. I like people to act close and personal with me.

___30. I try to influence strongly other people's actions.

___31. I like people to invite me to join in their activities.

___32. I like people to act close toward me.

___33. I try to take charge of things when I am with people.

___34. I like people to include me in their activities.

___35. I like people to act cool and distant toward me.

___36. I try to have other people do things the way I want them done.

___37. I like people to ask me to participate in their discussions.

___38. I like people to act friendly toward me.

___39. I like people to invite me to participate in their activities.

___40. I like people to act distant toward me.

For each of the next group of statements, choose one of the following answers:

1. usually 2. often 3. sometimes 4. occasionally
5. rarely 6. never

___41. I try to be the dominant person when I am with people.

___42. I like people to invite me to things.

___43. I like people to act close toward me.

___44. I try to have other people do things I want done.

___45. I like people to invite me to join their activities.

___46. I like people to act cool and distant toward me.

___47. I try to influence strongly other people's actions.

___48. I like people to include me in their activities.

___49. I like people to act close and personal with me.

___50. I try to take charge of things when I am with people.

___51. I like people to invite me to participate in their activities.

___52. I like people to act distant toward me.

___53. I try to have others do things the way I want them done.

___54. I take charge of things when I am with people.

APPENDIX B

GENERAL INSTRUCTIONS FOR SOOT

SAMPLE ITEM FROM SLEF ESTEEM SCALE

SAMPLE ITEM FROM SELF CENTRALITY SCALE

COMPLEXITY SCALE

Social Orientation Tasks

The questions which follow are designed to provide an indication of the way you look at yourself and significant other people. In this description of yourself and others, words are avoided. This is a social psychological instrument designed for research purposes only. Hopefully, it will tell us something about differences among people in their perceptions of self and others.

This instrument has been approved by the Department of Health, Education and Welfare, Office of Education.

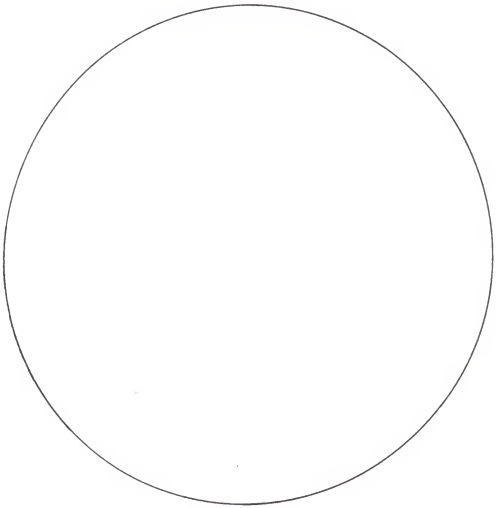
Please work as quickly as possible. It should require little more than ten minutes.

The circles below stand for people. Mark each circle with the letter standing for one of the people in the list. Do this in any way you like, but use each person only once and do not omit anyone.

F - someone who is flunking
H - the happiest person you know
K - someone you know who is kind
S - yourself
Su - someone you know who is successful
St - the strongest person you know

Self Centrality Item

In the large circle below, draw two circles -- one to stand for yourself and a second to stand for a friend. Place an S in the circle for self and an F in the circle for your friend.



Complexity Scale

Instructions: Here is a list of words. You are to read the words quickly and check each one that you think describes YOU. You may check as many or as few words as you like -- but be HONEST. Don't check words that tell what kind of person you should be. Check words that tell what kind of a person you really are.

1. ____ able
2. ____ active
3. ____ afraid
4. ____ alone
5. ____ angry
6. ____ anxious
7. ____ ashamed
8. ____ attractive
9. ____ bad
10. ____ beautiful
11. ____ big
12. ____ bitter
13. ____ bold
14. ____ brave
15. ____ bright
16. ____ busy
17. ____ calm
18. ____ capable
19. ____ careful
20. ____ careless
21. ____ charming
22. ____ cheerful
23. ____ clean
24. ____ clever
25. ____ comfortable
26. ____ content
27. ____ cruel
28. ____ curious
29. ____ delicate
30. ____ delightful
31. ____ different
32. ____ difficult
33. ____ dirty
34. ____ dull
35. ____ dumb
36. ____ eager
37. ____ fair
38. ____ faithful
39. ____ false
40. ____ fine
41. ____ fierce
42. ____ foolish
43. ____ friendly
44. ____ funny
45. ____ generous
46. ____ gentle
47. ____ glad
48. ____ good
49. ____ great
50. ____ happy
51. ____ humble
52. ____ idle
53. ____ important
54. ____ independent
55. ____ jealous
56. ____ kind
57. ____ large

58. ____ lazy
59. ____ little
60. ____ lively
61. ____ lonely
62. ____ loud
63. ____ lucky
64. ____ mild
65. ____ miserable
66. ____ modest
67. ____ neat
68. ____ old
69. ____ patient
70. ____ peaceful
71. ____ perfect
72. ____ pleasant
73. ____ polite
74. ____ poor
75. ____ popular
76. ____ proud
77. ____ quiet
78. ____ quick
79. ____ responsible
80. ____ rough
81. ____ rude
82. ____ sad
83. ____ selfish
84. ____ sensible
85. ____ serious
86. ____ sharp
87. ____ silly
88. ____ slow
89. ____ small
90. ____ smart
91. ____ soft
92. ____ special
93. ____ stronge
94. ____ stupid
95. ____ strong
96. ____ sweet
97. ____ terrible
98. ____ ugly
99. ____ unhappy
100. ____ unusual
101. ____ useful
102. ____ valuable
103. ____ warm
104. ____ weak
105. ____ wild
106. ____ wise
107. ____ wonderful
108. ____ wrong
109. ____ young

APPENDIX C

DISCUSSION PROBLEM 1
(ABORTION PROBLEM)

DISCUSSION PROBLEM 2
(LIVING-TOGETHER PROBLEM)

Discussion Problem 1
(Abortion Problem)

Mary is four weeks pregnant. Both she and her husband Bob are somewhat ambivalent about having a baby at this point in their lives. Bob tells Mary that she should do whatever she would be most happy with. Mary can go ahead and have the baby, or she can have an abortion. The couple has a secure income and a baby would present no great financial burden, but Mary is still not sure about having the baby. She has other interests in her life and would like to pursue them; on the other hand, she is not completely adverse to being a mother. What do you think Mary should do? How do you feel about Bob's position on the matter?

Discussion Problem 2
(Living-Together Problem)

Sandra has just gotten home from work and finds her boyfriend John just ending a telephone conversation. John tells her that he was speaking with his parents and that they are arriving the next morning for his birthday. He then tries to convince Sandra that she will have to make it look like she is not living there, but is merely spending the day. While John feels very committed to Sandra now after three months of living together, he is afraid his parents would not react very well to finding out about them at this time. Sandra, however, is of a different opinion, and states that she does not need to pretend for anyone. What do you think Sandra should do? How do you feel about John's position in the matter?

APPENDIX D

COVERBAL BEHAVIOR MEAN VALUES

INTERPERSONAL ORIENTATION MEAN SCORES

Coverbal Behavior Mean Values[a]

Turn Length	Facing	Movement	Touching	Head Tilts
5.8	.38	.20	.70	.22

[a]Turn Length is the mean time in seconds of all turns. All other behavior means represent the mean value of the proportion of each turn during which the respective behavior was occurring.

Interpersonal Orientation Mean Scores

FIRO-B				SOOT		
WI	EI	WC	EC	SE	Cent	Comp
5.7	5.1	3.4	3.8	26.9	2.0	51.8

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BIOGRAPHICAL SKETCH

William Wallace Campbell was born on September 28, 1939. After graduating from Murrah High School in Jackson, Mississippi, he attended Millsaps College for two years. After working in Washington, D.C. for two years and owning a business in Atlanta for four years, he returned to college in January, 1968. He received his B.A. degree from Georgia State University in Atlanta, Georgia. After working briefly for the Fulton County Family and Children Services in Atlanta he entered graduate school at the University of Florida in September, 1970 to begin his studies in clinical psychology. He was awarded the M.A. degree in December, 1971. He completed his course work in clinical psychology in the summer of 1973. Mr. Campbell completed a one-year internship in clinical psychology at the Department of Clinical Psychology in September, 1974. Shortly after completing his internship he began working for the Jacksonville Drug Abuse Program in Jacksonville, Florida while continuing to work on his doctoral dissertation. He is presently still employed at the Drug Program in Jacksonville. During his first year of graduate study he was a Graduate School Fellow. From the second year of graduate study through his internship he was a United States Public Health

Service trainee.

Mr. Campbell married the former Jeannie Clay in December, 1968. He is the father of one daughter, Brooke Elaine, and one son, Ross Bartley.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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Chairperson
Professor of Speech, Anthropology, and Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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December, 1976

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